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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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EXAMINER

HOSSAIN, TANIM M

ART UNIT	PAPER NUMBER
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2145

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/899,622	Applicant(s) APOSTOLOPOULOS ET AL.	
	Examiner Tanim Hossain	Art Unit 2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11 and 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-11, 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 5, 6, 9, 11, 13-15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kroon (U.S. 6,366,888) in view of Wang, et al. ("Multiple Description Coding Using Pairwise Correlating Transforms" from IEEE Transactions On Image Processing, Vol. 10, No. 3, March 2001) in further view of Ehrman (U.S. 2002/0040479).

As per claim 1, Kroon teaches a method for streaming media data to a client, said method comprising: encoding an item of content comprising media data to be streamed to said client into a first multiple description bitstream and into a second multiple description bitstream (Abstract; column 1, line 66 – column 2, line 30); and distributing concurrently said first and second multiple description bitstreams, such that said first and second multiple description bitstreams are sent to said client via a plurality of transmission paths at differing qualities, and wherein said client decodes a media stream of a quality greater than either of said first or second quality should both said first and said second multiple description bitstreams be received at said client (column 1, line 66 – column 2, line 30; column 9, lines 45-65). Kroon does not specifically teach that the multiple description bitstreams are decodable independent of one

another; and that client decodes said item of content at a first quality should only said first multiple description bitstream be received at said client, wherein said client decodes said item of content at a second quality should only said second multiple description bitstream be received at said client. Wang teaches decoding at a first quality should only first MDC be received at said client, decoding at a second quality should only second MDC be received at said client, and decoding at a higher quality than the first and second qualities should both MDCs be received at the client (abstract, column 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the independently decodable bitstreams as taught by Wang, into the media streaming system of Kroon. The motivation for doing so lies in the fact that adding acceptably functional bitstreams into Kroon would allow for a more robust system, where usable media can be received despite a failure to receive the baseline layer. Kroon also suggests using multiple baseline layers (column 10, lines 3-6), which renders the combination obvious to one of ordinary skill in the art. Kroon-Wang does not specifically teach the distribution of bitstreams to a plurality of servers placed at intermediate nodes throughout a network. Ehrman teaches the distribution of bitstreams to a plurality of servers and then allowing a client to receive the bitstreams from the plurality of servers (figure 1; paragraphs 0018-0023). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the ability to divide the bitstreams and send them to separate servers such that a client may receive the bitstreams from a plurality of paths, as taught by Ehrman in the system of Kroon-Wang. The motivation for doing so lies in the fact that Kroon-Wang contemplates path diversity through receiving packets from differing paths, but does not specifically disclose the differing paths correspond to differing servers. By including the transmission of data by different servers to one

client, as taught by Ehrman in the system of Kroon-Wang, transmission speed and system efficiency increases. All inventions are from the same field of endeavor, namely the streaming of multimedia through a network.

As per claim 2, Kroon-Wang-Ehrman further teaches that the encoding further comprises: encoding said item of media data into a first and second complementary multiple description bitstream wherein each of said first and second complementary multiple description bitstreams contains complementary information (Kroon: column 7, line 66 – column 8, line 6).

As per claim 4, Kroon-Wang-Ehrman further teaches that said encoding further comprises: encoding said item of media data into a first and a second complementary multiple description bitstream wherein each of said first and second complementary multiple description bitstreams does not include encoded media data that is included in the other of said first and second complementary multiple description bitstreams (Kroon: column 7, line 66 – column 8, line 6).

As per claim 5, Kroon-Wang-Ehrman further teaches that said item of media data is selected from the group consisting of audio-based data, speech-based data, image-based data, graphic-data, and web page-based data (Kroon: column 7, line 66 – column 8, line 6).

As per claim 6, Kroon-Wang-Ehrman further teaches that said distributing further comprises: distributing said first multiple description bitstream to a first server and distributing said second multiple description bitstream to a second server (Ehrman: 0018-0023).

As per claim 9, Kroon-Wang-Ehrman further teaches that said method does not require complete duplication of said media data in order to achieve path diversity (Kroon: column 7, line 66 – column 8, line 6).

As per claim 11, Kroon-Wang-Ehrman teaches a method for achieving reliability and efficiency and for reducing single points of failure in the streaming of media data to a client, said method comprising: encoding an item comprising media data to be streamed to said client into a first complementary multiple description bitstream and into a second complementary multiple description bitstream, each of said first and second complementary multiple description bitstreams containing complementary information not included in the other of said first and second complementary multiple description bitstreams, and wherein said first multiple description bitstream is designed so that said item of a first quality is decoded by said client with only said first multiple description bitstream received at said client, wherein said second multiple description bitstream is designed so that said item of a second quality is decoded by said client with only said second multiple description bitstream received at said client, and wherein said item of a quality greater than said first or second quality is decoded by said client with both said first and said second multiple description bitstreams received at said client (Kroon: abstract; column 1, line 66 – column 2, line 30; column 9, lines 45-65; Wang: abstract, column 1); and distributing concurrently said first complementary multiple description bitstream and said second complementary multiple description bitstream to a plurality of servers placed at intermediate nodes throughout a network, such that said first and second multiple description bitstreams are dispatched to said via a plurality of transmission paths (Ehrman: 0018-0023).

Claims 13-15, and 18 are rejected on the same bases as claims 4-6, and 9 respectively, as claims 13-15, and 18 teach a method of implementing claims 4-6, and 9 respectively.

Claims 7, 8, 10, 16, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kroon-Wang-Ehrman in view of Gershman (U.S. 6,401,085).

As per claim 7, Kroon-Wang-Ehrman teaches the method for streaming media data to a client as recited in claim 1, but does not specifically teach that the receiving client is a mobile client. Gershman teaches the limitation that the receiving client is a mobile client (column 3, lines 14-28). It would have been obvious to one of ordinary skill in the art at the time of the invention to include this limitation, as taught by Gershman in the system of Kroon-Wang-Ehrman, as they are all from the same field of endeavor, namely the efficient reception of services over the Internet. The existence of Internet capability on mobile devices is well known in the art, and its specific inclusion into Kroon-Wang-Ehrman's invention allows for further diversity and efficiency.

As per claim 8, Kroon-Wang-Ehrman-Gershman teaches the method for streaming media data to a client as recited in claim 7, wherein the step comprises: distributing said first and second multiple description bitstreams to servers placed along a wired/wireless gateway (Gershman: column 3, lines 14-28; where the existence of wireless communication constitutes the existence of a wireless gateway system).

As per claim 10, Kroon-Wang-Ehrman-Gershman teaches the method for streaming media data to a client as recited in claim 1, wherein said method is performed in a network system selected from the group consisting of: wired and wired networks; wired and wireless networks; wireless and wired networks; and wireless and wireless networks. The existence of a fully wired network, as taught by Kroon-Wang-Ehrman, and the capability of a fully wireless network as taught by Kroon-Wang-Ehrman-Gershman, or any combination thereof, allows for

the capability for there to exist any combination of wired and wireless interfaces. The different combinations constitute design choices and the teaching thus obvious to one of ordinary skill in the art at the time of the invention.

Claims 16, 17 and 19 are rejected under Kroon-Wang-Ehrman-Gershman on the same bases as claims 7, 8 and 10 respectively, as claims 16, 17 and 19 teach a method of implementing claims 7, 8 and 10 respectively.

Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kroon-Wang-Ehrman in view of Krueger (U.S. 6,308,222).

As per claim 20, Kroon-Wang-Ehrman teaches a system for streaming media data to a client, said system comprising: a first server having first memory coupled thereto, said first memory having a first multiple description bitstream of encoded said media data stored thereon, said first server adapted to transmit said first multiple description bitstream to a client via a first path (Kroon: Abstract; column 1, line 66 – column 2, line 30; column 9, lines 45-65; Ehrman: 0018-0023); and a second server having second memory coupled thereto, said second memory having a second multiple description bitstream of encoded said media data stored thereon, wherein said first multiple description bitstream and said second multiple description bitstream are decodable independent of one another, and wherein said first and second multiple description have approximately a same bitrate (Kroon: Abstract; column 1, line 66 – column 2, line 30; column 9, lines 45-65; Wang: abstract, column 1; Ehrman: 0018-0023), said second server adapted to transmit said second multiple description bitstream to said client via said second path, said first and second servers concurrently transmitting said first and second multiple description

bitstreams such that said first and second multiple description bitstreams are provided to said client via a plurality of transmission paths, wherein said client decodes an item of content at a first quality should only said first multiple description bitstream be received at said client, wherein said client decodes said item of content at a second quality should only said second multiple description bitstream be received at said client, and wherein said client decodes said item of content at a quality greater than either of said first or second quality should both said first and said second multiple description bitstreams be received at said client (Kroon: Abstract; column 1, line 66 – column 2, line 30; column 9, lines 45-65; Wang: abstract, column 1; Ehrman: 0018-0023). Kroon-Wang-Ehrman does not specifically teach that the second bitstream is transcoded to a reduced bit rate according to bandwidth requirements and capabilities. Krueger teaches the transmission of data from a server to a client, and transcoding the data based on a variety of client requirements, including available bandwidth for its path through the network (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the ability to transcode data in view of bandwidth capabilities, as taught by Krueger in the system of Kroon-Wang-Ehrman. The motivation for doing so lies in the fact that transcoding would allow for stream-quality commensurate with system capability, so as to optimize the user's experience. All inventions are from the same field of endeavor, namely the efficient streaming of data through a network.

As per claim 21, Kroon-Wang-Ehrman-Krueger further teaches that the system further comprises: a content server coupled to said first server and said second server, said content server adapted to provide said first multiple description bitstream of encoded said media data to said memory coupled to said first server, said content server further adapted to provide said

second multiple description bitstream of encoded said media data to said memory coupled to said second server (Kroon: Abstract; column 1, line 66 – column 2, line 30; column 9, lines 45-65; Ehrman: 0018-0023).

Claim 22 is rejected under Kroon-Wang-Ehrman-Krueger on the same basis as claim 5, which is rejected under Kroon-Wang-Ehrman, because claim 22 is a system for implementing the method of claim 5. The Krueger reference is necessarily included in the rejection of claim 22, as its parent claim, claim 20, is rejected under Kroon-Wang-Ehrman-Krueger.

Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kroon-Wang-Ehrman-Krueger in view of Gershman.

As per claim 23, Kroon-Wang-Ehrman-Krueger teaches the system for streaming media data to a client, but does not specifically teach that the client is a mobile client. Gershman teaches the limitation that the receiving client is a mobile client (column 3, lines 14-28). It would have been obvious to one of ordinary skill in the art at the time of the invention to include this limitation, as taught by Gershman in the system of Kroon-Wang-Ehrman-Krueger, as they are all from the same field of endeavor, namely the efficient reception of services over the Internet. The existence of Internet capability on mobile devices is well known in the art, and its specific inclusion into Kroon-Ehrman's invention allows for further diversity and efficiency.

As per claim 24, Kroon-Wang-Ehrman-Krueger-Gershman further teaches the system for streaming media data to a client, wherein said first server is placed along a wired/wireless gateway of a network (Gershman: column 3, lines 14-28; where the existence of wireless communication constitutes the existence of a wireless gateway system).

As per claim 25, Kroon-Wang-Ehrman-Krueger-Gershman further teaches the system for streaming media data to a client, wherein said second server is placed along a wired/wireless gateway of a network (Gershman: column 3, lines 14-28).

As per claim 26, Kroon-Wang-Ehrman-Krueger-Gershman further teaches the method for streaming media data to a client, wherein said method is performed in a network system selected from the group consisting of: wired and wired networks; wired and wireless networks; wireless and wired networks; and wireless and wireless networks. The existence of a fully wired network, as taught by Kroon-Wang-Ehrman-Krueger, and the capability of a fully wireless network as taught by Kroon-Wang-Ehrman-Gershman, or any combination thereof, allows for the capability for there to exist any combination of wired and wireless interfaces. The different combinations constitute design choices and the teachings are thus obvious to one of ordinary skill in the art at the time of the invention.

Response to Arguments

Applicant's arguments filed on December 26, 2006 have fully been considered, but are not persuasive.

a. Applicant asserts that the Kroon-Wang combination is improper, because the Kroon system would be inoperable if combined with the Wang system. Examiner respectfully disagrees. The Kroon invention is relied upon to teach the concepts of streaming media to a client through multiple description bitstreams, such that when multiple streams are received by the client, it is decoded at a quality higher than the bitstreams individually. Therefore, the

combined stream is at a higher quality than the individual streams. As discussed above, Kroon does not teach that the streams are independently decodable and usable, if only one stream is received, for example. The Wang reference is then relied upon to disclose the teaching of having multiple streams, such that combined, they are decoded at a quality higher than the individual streams, and that the streams can be decoded independently, but at a lower quality. Therefore, the inclusion of the teachings of Wang into the cited teachings of Kroon would not render the Kroon system inoperable, but would rather improve it, such that the individual streams now have independent decodability and usability. In view of Kroon's requirements for fast and reliable streaming, the inclusion of independent decoding functionality as taught by Wang would have been obvious to one of ordinary skill in the art at the time of the invention, as discussed above.

b. Regarding claim 20, Applicant asserts that Kroon-Wang-Ehrman-Krueger does not teach "wherein said client decodes an item of content at a first quality should only said first multiple description bitstream be received at said client, wherein said client decodes said item of content at a second quality should only said second multiple description bitstream be received at said client, and wherein said client decodes said item of content at a quality greater than either of said first or second quality should both said first and second multiple description bitstreams be received at said client." Examiner respectfully disagrees. This exact teaching is taught in Wang, as discussed above, in the abstract and column 1.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanim Hossain whose telephone number is 571/272-3881. The examiner can normally be reached on 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571/272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2145

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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